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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,031	01/14/2004	Bruce Anthony Tavares	4588-00003E	6154

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EXAMINER
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MAI, NGOCLAN THI

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/758,031	<b>Applicant(s)</b> TAVARES ET AL.	
	<b>Examiner</b> Ngoclan T. Mai	<b>Art Unit</b> 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-16 is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9,11 and 12 is/are rejected.
- 7) ☒ Claim(s) 3-4, 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/18/04, 8/21/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 as instant cast recites "The modified lubricant of claim 1". The claim is indefinite because it does not further limit the parent claim. Claims 7-8 are rejected for depended on rejected base claim.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 5 and 9 recite the broad recitation for the lubricant/(starch+cellulose fragments) "1:2 to 10:1", and the claim also recites "1:1 to 4:1" which is the narrower statement of the range/limitation.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 9, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engstrom (U.S. Patent No. 4,483,905).

Engstrom discloses homogenous iron based powder mixtures free of segregation comprising particles of iron or steel, particles of an alloying element and powder containing binding agent in solid state, abstract. Binder agent is added to eliminate segregation/dusting effect, col. 4, lines 7-10. The binding agent is one of polyethylene glycol, polypropylene glycol, glycerin and polyvinyl alcohol in a quantity of 0.005 to 1.0 percent by weight (col. 2, lines 52-55). Lubricant is added to the powder mixture to facilitate the pressing of powder in a tool at the final use, col. 2, lines 66-68. Particularly Engstrom teaches a powder mixture comprising iron powder, alloying powder, binder in the amount of 0.02% and zinc stearate in the amount of 0.8% as a lubricant, col. 4, lines 24-30. The mixture has a flow rate of 35 sec/50 g, col. 4 Table, mixture E.

Engstrom differs from the claims in that Engstrom does not teach employing (a) starch as the binder and (b) the particle size of starch particle.

As for (a) GP '702 teaches a binder such as polyvinyl alcohol, starch and gum is added to iron based powder to reduce loss of the material through dusting, page 3, lines 6-9. GP '702 therefore teaches powder mixture that is free of segregation. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute starch for polyvinyl alcohol as the binder agent in the powder mixture of Engstrom since starch is functionally equivalent to polyvinyl alcohol.

Art Unit: 1742

As for (b) while Engstrom teaches using iron-based powder in the size substantially below 147 microns (col. 4, lines 11-14) and alloying powder having maximum particle size of 44 microns, (col. 3, lines 17-19), Engstrom is silent about the size of the solid binder. However it is conventionally well known in the art that binding agent used to bind particles of powder together should be in a size smaller than the size of the powder being bonded to facilitate homogenous mixing. Thus it would have been obvious to one skilled in the art to use starch particle as taught by Engstrom in view of GP '702 in the size less than the size of the smallest powder, i.e., less than 44 microns.

As for claim 2, zinc stearate is a metal soap. While Engstrom is silent about lubricants other than zinc stearate, it is conventionally known in the art to use lubricant as recited in the instant claim. It would have been obvious to one skilled in the art to employ lubricants that are conventionally well known in the art to facilitate the pressing the of powder mixture taught by Engstrom in view of JP '702.

As for claim 9, the claim recites fragmented cellulose fibers can be present in an amount of from 0 to less than 0.75. Such limitation includes zero as the lower limit thus the claimed mixture is not different from the powder mixture of Engstrom and view of JP'702 for the reasons above.

4. Claims 13-16 are allowable because none of the cited prior art teaches or suggests a modified lubricant consisting essentially of a combination of lubricant and starch particles wherein the lubricant and the starch particles have particle size and particle size distribution as recited in the claims and wherein the starch has Hall apparent density in the range of from 2.8 to 3.2 g/cc.


5. Claims 3-4 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 1742

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ngoclan T. Mai  
Primary Examiner  
Art Unit 1742